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EXAMINER

BUTLER, DENNIS

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TIMOTHY FISCHER and SAMUEL NAFFZIGER

Appeal 2008-004469
Application 10/679,725
Technology Center 2100

Decided: May 24, 2010

Before ROBERT E. NAPPI, MARC S. HOFF and CARL W.
WHITEHEAD, JR. *Administrative Patent Judges.*

WHITEHEAD, JR., *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final decision rejecting claims 1-3, 9-11 and 15-17 (Appeal Brief 2). We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

BACKGROUND

Appellants' invention is directed to a central processing unit with multiple clock zones that includes at least one sensor that generates a power signal indicative of a power supply voltage within each clock zone. (Appeal Brief 3-4).

Claim 1, which further illustrates the invention, follows:

1. A central processing unit (CPU) that includes multiple clock zones, said CPU comprising:
 - in each clock zone,
 - at least one sensor that generates a power signal indicative of a power supply voltage within said clock zone;
 - a clock generator for providing a variable frequency clock to said clock zone; and
 - a controller for controlling an operating frequency of said clock generator in response to said power signal and in response to frequency adjustment communications from other clock zones.

Appellants appeal the following rejections:

Claims 1, 10 and 15 stand rejected on the grounds of non-statutory obviousness-type double patenting over claims 1, 8 and 15 of Fischer (US Patent 7,076,679 B2, July 11, 2006). Answer 3-4.

Claims 1-3, 9-11 and 15-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Georgiou (US Patent 6,047,248, April 4, 2000). Answer 4-5.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Appeal Brief (filed June 29, 2007), the Reply Brief (filed December 4, 2007) and the Answer (mailed October 9, 2007) for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Brief have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2008).

ISSUE

Does Georgiou's temperature sensor generate a power signal that is indicative of the power supply voltage within a clock zone of the claimed central processing unit?

FACTUAL FINDINGS

1. Figure 5b is reproduced below:

FIG.5b

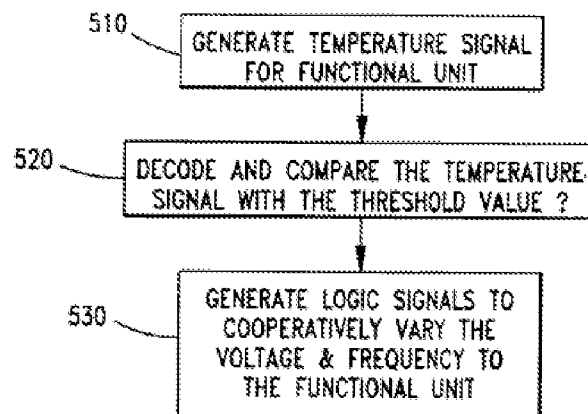


Figure 5b discloses a logic flowchart that illustrates a method for cooperatively modulating the voltage and frequency applied to a circuit such as a functional unit of a processor (col. 10, ll. 22-25; Georgiou).

2. Georgiou discloses that each functional unit may have an on-chip thermal sensor 119 that generates an electrical signal 125 representative of the temperature of the associated functional unit. The signal from the thermal sensor is provided to a temperature decoder 130 which samples the signal and compares it to a predetermined temperature threshold to determine if the functional unit is overheating (col. 4, ll. 18-21, 27-30).

ANALYSIS

Double Patenting Rejection

Appellants acknowledge the non-statutory obviousness-type double patenting rejection and indicate that a terminal disclaimer would be filed to overcome the rejection should the rejection apply to the allowed claims.

Appeal Brief 5. Appellants do not address the merits of the rejection; therefore we will sustain *pro forma* the Examiner's double patenting rejection of claims 1, 10 and 15.

Obviousness Rejection

Appellants argue that Georgiou does not describe at least one sensor that generates a power signal indicative of a power supply voltage within the clock zone as required by claim 1. Appeal Brief 6. Appellants contend that Georgiou monitors the temperature of a functional unit and if the temperature exceeds a threshold, Georgiou reduces the operating voltage and/or frequency to reduce the thermal output of the functional unit. *Id.* It is

the Examiner's position that the Appellants' Specification (paragraph 13, ll. 1-2) as well as claim 9 indicate that the sensor can be a thermal sensor/detector. Answer 7; *see also* FF 1-2. Appellants argue that Georgiou explicitly states that the temperature sensor produces a signal indicative of the temperature of the functioning unit and not its power supply voltage as required by both claims 1 and 15. Reply Brief 5. Appellants further argue that Georgiou does not state that the temperature signal is indicative of the power supply as stated by the Examiner. *Id.* We find the Appellants' arguments persuasive.

Georgiou discloses the employment of a temperature sensor but indicates that the sensor is for temperature monitoring and generates an electrical signal accordingly. *See* FF 1-2. Georgiou does not disclose that the temperature sensor generates a signal that is indicative of the power supply voltage as required in claim 1.

Claim 10 does not specify a sensor but instead recites "generating at least one power signal that is indicative of a power supply voltage within each of said clock zones." However, Georgiou does not disclose a method wherein the power signal is generated based upon the power supply voltage.

Claim 15 recites "means for generating a power signal that is indicative of a power supply voltage within said clock zone". However, Georgiou does not disclose means wherein the power signal is generated based upon the power supply voltage.

Therefore we will not sustain the Examiner's obviousness rejection of claims 1-3, 9-11 and 15-17.

NEW GROUND OF REJECTION

“[T]o be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without “undue experimentation.” *In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993). Some experimentation, even a considerable amount, is not “undue” if, e.g., it is merely routine, or if the specification provides a reasonable amount of guidance as to the direction in which the experimentation should proceed. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

The Examiner’s rejection of claim 9 over the prior art is reversed and a new ground of rejection under 35 U.S.C. § 112, first paragraph is made because the specification does not enable one of ordinary skill in the art to incorporate a thermal detector sensor that generates a power signal indicative of a power supply voltage thermal detector within a central processing unit.

The Specification in paragraph [0013] states, “Each phase controller 101 receives input signals from one or several regional voltage detectors 102 (or, alternatively, thermal sensors) to control variable clock generators 103.” We reject claim 9 as the Specification does not enable one skilled in the art to use a thermal sensor to monitor a voltage. The Specification only refers to the use of a voltage detector or, alternatively, a thermal sensor to control a variable clock generator; it does not state that the thermal sensor generates a signal indicative of a power supply voltage.

Therefore claim 9 is rejected for failing to comply with the enablement requirement of 35 U.S.C. § 112, first paragraph.

DECISION

We affirm the Examiner's non-statutory obviousness-type double patenting rejection as being unpatentable over claims 1, 8 and 15 of Fischer.

We reverse the Examiner's 35 U.S.C. § 103(a) rejection of claims 1-3, 9-11 and 15-17 as being unpatentable over Georgiou.

We enter a new ground of rejection for claim 9 for failing to comply with the enablement requirement of 35 U.S.C. § 112, first paragraph.

TIME PERIOD

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). 37 C.F.R. § 41.50(b) provides that "[a] new ground of rejection., shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the Appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

(1) Reopen prosecution. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner

Appeal 2008-004469
Application 10/679,725

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record

ORDER
AFFIRM-IN-PART

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